**Before the**
**Federal Communications Commission**
**Washington, DC 20554**

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| In the Matter of | ) | |
| | ) | |
| Business Broadband Marketplace | ) | WC Docket No. 10-188 |
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# COMMENTS OF VERIZON AND VERIZON WIRELESS


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## I. INTRODUCTION AND SUMMARY[1]

As the Commission's Notice correctly notes, "businesses rely on a wide range of broadband services today and . . . providers use a variety of transmission technologies – consisting of various transmission media and communication protocols – to provision these services."[2] In fact, at every level of the highly differentiated and rapidly evolving "business broadband marketplace," there is a wide range of competitive alternatives available, and there is massive ongoing investment in new broadband networks and technologies, ranging from services provided over cable networks, to Gigabit Ethernet services, to next-generation 4G wireless services. Thus, while the Commission has repeatedly found that the broadband marketplace as a whole – and business broadband services in particular – are highly competitive, that conclusion holds even more true today.

The Commission's analysis of the business broadband marketplace should begin with the recognition that there is a wide range of business customers and corresponding broadband services that defy easy categorization or quantification. Business customers occupy a continuum, ranging from one-person businesses run out of the home to major corporations with offices spread throughout the country and the world. The broadband communications services required by these customers likewise occupy a wide continuum, ranging from the same wireless and wireline broadband used by mass-market customers, to advanced national and multi-national dedicated networks. Moreover, the business broadband marketplace – like the broadband marketplace as a whole – is rapidly evolving, with rapidly increasing demand for new services and new technologies emerging to satisfy that demand.

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[1] In addition to Verizon Wireless, the Verizon companies participating in this filing ("Verizon") are the regulated, wholly owned subsidiaries of Verizon Communications Inc.

[2] FCC Public Notice, *Wireline Competition Bureau Seeks Comment on Business Broadband Marketplace*, WC Docket No. 10-188, DA 10-1743, at 1 (Sept. 15, 2010) ("Notice").

Regardless of where the Commission looks along the continuum of business customers or business broadband services, however, it will find robust and growing competition and investment. Verizon offers a wide range of broadband services over both wireline and wireless networks to business customers ranging from solo offices to multi-national enterprises and everything in between. At each level of the business broadband marketplace, Verizon faces intense competition from a range of providers, and this competitive landscape is continuing to evolve. With respect to wireline broadband, for example, each of the nation's major Cable operators has made substantial inroads in providing broadband services to small and medium business customers, and all are now in the process of moving "upmarket" to serve larger businesses. Multiple other competitive wireline providers – using metropolitan fiber networks or a combination of those networks and high-capacity facilities leased from third parties – also offer a range of business broadband services, including everything from DSL, to Ethernet, to "mature" services like ATM and Frame Relay.

Wireless services – both fixed and mobile – provide additional competition in the business broadband marketplace. Fixed wireless providers now offer retail business broadband services in areas throughout the country, and many of these providers also offer their services as wholesale inputs for other providers to offer broadband services. Business customers are also now using a range of broadband-enabled wireless devices – from smartphones, to netbooks and tablets, to devices that enable machine-to-machine ("M2M") communication – to perform an increasing array of functions associated with their corporate operations. Each of the four national wireless carriers offers a range of services designed for business customers of all sizes, and many also are investing heavily in next-generation wireless technologies such as LTE as well as the development of new applications. In addition, new entrants such as Clearwire are

deploying new 4G wireless networks in markets throughout the country, and likewise are offering broadband services designed specifically for business customers.

## II. THE BROADBAND BUSINESS MARKETPLACE CONSISTS OF A WIDE CONTINUUM OF CUSTOMERS AND SERVICES THAT DEFY SIMPLE CATEGORIZATION OR QUANTIFICATION

The Notice seeks to develop a "comprehensive analytic framework" of the "business broadband marketplace."[3] There are several important principles that should guide the Commission as it develops that framework.

First, any attempt to group business customers by size – such as "small," "medium," and "enterprise," is necessarily arbitrary. Business customers instead occupy a broad continuum that defies simple categorization. At one end of the continuum are one-person businesses run out of the home or small office. According to the Small Business Administration ("SBA") and U.S. Census data, there are more than 27 million U.S. businesses.[4] Approximately 80 percent of these 27 million businesses do not have any employees.[5] Among the businesses with employees, approximately 61 percent have 1-4 employees, 18 percent have 5-9 employees, 11 percent have 10-19 employees, 9 percent have 20-99 employees, and 1.5 percent have 100-499 employees.[6]

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[3] Notice at 1.

[4] *See* U.S. Small Business Administration, Advocacy Small Business Statistics and Research, *FAQs: Frequently Asked Questions*, http://web.sba.gov/faqs/faqindex.cfm?areaID=24 (citing Office of Advocacy estimates).

[5] *See id.* (citing Office of Advocacy estimates).

[6] *See* U.S. Small Business Administration, *Private Firms, Establishments, Employment, Annual Payroll and Receipts by Firm Size, 1988-2007*, http://www.sba.gov/advo/research/us88_07.pdf; *see also* IDC, U.S. SMB Telecom Voice and Data Services 2010-2013 Forecast, Doc #224295, Aug. 2010, at 14, Table 3 (IDC estimates that, excluding home-based businesses, there are approximately 7.8 million small businesses (fewer than 100 employees) and approximately 7.9 million medium-sized businesses (100-999 employees) in 2010); Craig Moffett et al., BernsteinResearch, *U.S. Cable: Getting Down to Business . . . A Discussion with Cox Communications [Conference Call Transcript]*, at 6-7 & Exh. 5 (Sept. 28, 2010) ("[T]he SMB opportunity . . . is the majority of commercial enterprises in the U.S. . . . [Y]ou see that about

At the other end of the spectrum are major corporations with offices spread throughout the country and, in many cases, the world. Although there is no settled definition of "enterprise" customer, a frequently used benchmark is a business with 500 or more employees.[7] There are approximately 18,000 such businesses nationwide, and these businesses account for approximately half of total U.S. employment (60.7 million out of 120 million).[8] Of course, there is a significant range within this group as well – between those businesses that employ close to 500 employees all the way up to Fortune 1000 companies that employ several million, the federal government, large state-government entities, large public institutions, and everything in between. Thus, as the Commission has found, "there does not appear to be industry-wide consensus as to how to differentiate one class of enterprise customers from another."[9]

Second, although business customers defy simple categorization, there are some logical distinctions that can be drawn based on the broadband needs of these types of customers. For example, as the Commission has previously found, very small businesses tend to have the same

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75% of commercial enterprises in the U.S. are under ten people. You get all the way up into the high 90% range when looking at enterprises that have less than 100 people.").

[7] *See, e.g.*, U.S. Small Business Administration, *Guide to SBA's Definitions of Small Business*, at 5, http://www.sba.gov/idc/groups/public/documents/sba_homepage/guide_to_size_standards.pdf ("[S]mall business size standards define the maximum size that a firm, including all of its affiliates, may be. The SBA has established two widely used size standards – 500 employees for most manufacturing and mining industries and $7.0 million in average annual receipts for most nonmanufacturing industries."); Alexander Hammer et al., U.S. International Trade Commission, *Small and Medium-Sized Enterprises: Overview of Participation in U.S. Exports*, at viii (Jan. 2010), http://www.usitc.gov/publications/332/pub4125.pdf ("For the purposes of this report, the Commission has defined SMEs as firms that employ fewer than 500 employees").

[8] *See* U.S. Small Business Administration, *Private Firms, Establishments, Employment, Annual Payroll and Receipts by Firm Size, 1988-2007*, http://www.sba.gov/advo/research/us88_07.pdf.

[9] *Petition of Qwest Communications International Inc. for Forbearance from Enforcement of the Commission's Dominant Carrier Rules As They Apply After Section 272 Sunsets*, Memorandum Opinion and Order, 22 FCC Rcd 5207, ¶ 24 (2007) ("*Qwest 272 Sunset Order*")

communications needs as mass-market customers.[10] These customers tend to purchase "off-the-shelf" broadband services rather than customized solutions or services.[11] By comparison, both large and medium-sized businesses tend to demand "advanced features" and services, and often require that these features and services be customized to their needs.[12] Thus, these customers are rarely able to satisfy their telecommunications needs exclusively with standardized products and services purchased off-the-shelf and instead require a higher degree of individualized attention. As the Commission has found, "[r]etail enterprise customers purchase a variety of different communications services, including local voice, long distance and international voice, and data services. In addition, enterprise customers frequently purchase high-capacity transmission services, including Frame Relay, Asynchronous Transfer Mode (ATM), Gigabit Ethernet, and

[10] *See, e.g., Petition of Qwest Corporation for Forbearance Pursuant to 47 U.S.C. § 160(c) in the Omaha Metropolitan Statistical Area*, Memorandum Opinion and Order, 20 FCC Rcd 19415, ¶ 28 n.78 (2005) ("Due to the[] similarities between the kinds of services that residential customers and very small business customers purchase, as well as how carriers market and provide service to them, we find that the economic considerations that lead to the provision of service to a residential customer are similar to the economic considerations that lead to the provision of service to a very small business customer."); *Petition of Qwest Corporation for Forbearance Pursuant to 47 U.S.C. Section 160(c) in the Phoenix, Arizona Metropolitan Statistical Area*, Memorandum Opinion and Order, 25 FCC Rcd 8622, ¶ 81, n.242 (2010) ("[M]ass market residential and very small business customers . . . have similar demand patterns, are served primarily through mass marketing techniques, purchase similar volumes and types of communications services, and would likely face the same competitive alternatives within a geographic market.").

[11] *See, e.g., Section 272(f)(1) Sunset of the BOC Separate Affiliate and Related Requirements*, Report and Order and Memorandum Opinion and Order, 22 FCC Rcd 16440, ¶ 22, n.72 (2007) ("In prior proceedings, the Commission has defined mass market customers as residential and small business customers that purchase standardized offerings of communications services.").

[12] *Application of WorldCom, Inc. and MCI Communications Corporation for Transfer of Control of MCI Communications Corporation to WorldCom, Inc.*, Memorandum Opinion and Order, 13 FCC Rcd 18025, ¶ 26 (1998).

similar services provided via emerging technologies. Retail enterprise customers also purchase other facilities and customer premises equipment (CPE)."[13]

Third, just as it is difficult to put business customers into separate categories, it is often difficult to separate broadband services from the other communications services that a business customer may purchase – whether voice, video, or other types of data services. As an initial matter, many business customers purchase broadband in a bundle with other communications services, and any attempt to separate out the broadband components is necessarily arbitrary. According to one analyst study, for example, "nearly 70% of small firms currently get Internet access as part of a bundle from a single provider."[14]

Moreover, broadband is typically used in combination with other services – from internal corporate networks to long-haul transport – and the lines between the broadband component and other components are often difficult to discern. For example, take the case of corporation with hundreds of employees in multiple locations. The corporation may have internal local-area-networks at both ends and some type of high-capacity line comprising both local and long-distance transport between them, and this same connection may be used not only for intra-company communications but also for external connections to the Internet or other private networks. In this scenario, the portion of the total communications solution that the Commission would likely classify as "broadband" is difficult (if not impossible) to isolate. Moreover, services traditionally labeled "broadband" represent just a small fraction of the high-capacity connections that are used in this circumstance. For example, a recent IDC survey of nearly 700 U.S. businesses with more than 50 employees found more than five main types of "last mile

[13] *Qwest 272 Sunset Order* ¶ 21 (footnotes omitted).

[14] IDC, U.S. Small Business Internet 2010-2014 Forecast: Economic Challenges Take a Bite Out of Web Site Ownership and eCommerce Activity, Doc #224751, Sept. 2010, at 9.

access connectivity" used to provide individual corporate sites with access to a wide-area corporate network, only one of which these customers described as "broadband," representing 22 percent of the total; the others were private line (40 percent), Fiber (13 percent), Ethernet (12 percent), Wireless (11 percent), and other (2 percent).[15]

Fourth, in order to understand the broadband marketplace as a whole, the Commission should consider not only the broadband connections that business customers are using, but also the entire evolving "ecosystem" of services and equipment that those connections have helped foster. Businesses are using wireline and wireless broadband to change the way they operate in fundamental respects. For example, businesses have begun extensive use of cloud computing, which migrates computing functionality off of desktops and onto remote servers that are accessed by high-speed connections. A recent survey of IT executives in U.S. businesses found, for example, that approximately one-third were using private networks to access clouds, while another one-third were using a combination of private and public networks (such as the Internet) for cloud computing access.[16] Businesses also are embracing wireless broadband devices to perform a wide variety of functions. Numerous recent articles have noted, for example, the extensive adoption of the iPad by U.S. businesses, enabling everything from doctors accessing and displaying patient medical records to teachers downloading textbooks.[17] In response, RIM

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[15] *See* IDC, 2009 U.S. WAN Manager Survey: Ethernet Services, Doc #222019, Feb. 2010.

[16] Ellen Messmer, *Cloud Computing in the U.S. Shows Momentum*, Network World, http://www.networkworld.com/news/2010/100510-cloud-computing-momentum.html (Oct. 5, 2010); *see also* Simon Flannery et al., Morgan Stanley, *Cloud Computing Symposium: Key Takeaways*, at 2 (May 26, 2010) ("Wireless device (smartphone / tablet) adoption has empowered consumers to expect (and demand) cloud-based high-speed wireless connectivity 24x7 - Net, consumers are pushing their employers to improve their technology infrastructure so it can be as effective / efficient as their stuff (often iTunes-enabled Apple products connected via WiFi) at home...all with the goal of improving productivity.").

[17] *See, e.g.*, Ben Worthen, *Businesses Add iPads to their Briefcases*, Wall St. J. (Aug. 24, 2010), http://online.wsj.com/article/SB10001424052748703846604575447531699309858.html ("More

has recently announced the new BlackBerry PlayBook, which the company states is aimed squarely at corporate users.[18]

These new services and devices all use broadband in some form, but also further the blur the lines between what the Commission has traditionally considered broadband and other services or connections. Cloud computing, for example, relies not only on local high-speed connections, but a web of private or public high-speed networks to connect distant servers. Wireless smartphones and tablets are now being designed to transition seamlessly from using a 3G (and eventually 4G) wireless connection supplied by a carrier, to using WiFi networks in public places or private WiFi networks in the home or office. In short, the traditional notion of a wireline broadband connection providing access to the Internet no longer begins to describe the wide range of broadband-enabled services and applications that now comprise the business broadband marketplace.

Given these facts, it is impractical – as the Notice asks – to quantify "the overall size of the business broadband marketplace today, in terms of revenues, demand, or other criteria."[19] Nonetheless, various third-party analysts have estimated the size of various components of the business broadband marketplace. For example, BernsteinResearch estimates that "[t]he Small and Medium Business (SMB) market represents a telecommunications opportunity between $50-

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than 500 of the 11,000-plus applications built specifically for the iPad are in the business category."); *Q3 2010 Apple Inc. Earnings Conference Call – Final*, FD (Fair Disclosure) Wire, Transcript 072010a3194517.717 (July 20, 2010) (statement by Apple Inc. COO Tim Cook: "[S]o in the first 90 days, we already have 50% of the Fortune 500 that are deploying or testing the iPad. It is incredible.").

[18] *See* RIM Press Release, *RIM Unveils the BlackBerry PlayBook* (Sept. 27, 2010), http://press.rim.com/release.jsp?id=4577 ("[T]he BlackBerry PlayBook is enterprise ready and compatible (out-of-the-box) with BlackBerry Enterprise Server."); *see also id.* (statement by RIM President and Co-CEO Mike Lazaridis: "RIM set out to engineer the best professional-grade tablet in the industry.").

[19] Notice at 3.

70B, equaling the size of the entire residential cable video and broadband market today."[20] IDC has found that "[r]oughly 9 in 10 firms with fewer than 100 employees own personal computers, and nearly all of these have high-speed Internet access," with "steady growth in recent years driven by greater availability, active promotion, and packages that offer discounted rates when purchased together with phone, wireless, and TV service."[21] IDC expects total wireline data revenue among small and medium businesses (which it defines as businesses with fewer than 1,000 employees) to increase 21 percent within three years, from $19.8 billion in 2009 to more than $24 billion in 2012.[22] IDC expects total enterprise wireline data revenue to increase approximately 7 percent within three years, from $28.4 billion in 2009 to nearly $30.4 billion in 2012.[23] Compass Intelligence estimates that in 2009, data expenditures totaled $6 billion for wireline and $2.3 billion for wireless for SOHO businesses (fewer than 5 employees), $25.4 billion for wireline and $3.3 billion for wireless for small businesses (5 to 99 employees), $16.7 billion for wireline and $1.5 billion for wireless for mid-sized businesses (100 to 999 employees), and $72.6 billion for wireline and $5.9 billion for wireless for enterprises (1,000 or

[20] Craig Moffett et al., BernsteinResearch, *U.S. Cable: Getting Down to Business . . . A Discussion with Cox Communications [Conference Call Transcript]*, at 1 (Sept. 28, 2010).

[21] IDC, U.S. Small Business Internet 2010-2014 Forecast: Economic Challenges Take a Bite Out of Web Site Ownership and eCommerce Activity, Doc #224751, Sept. 2010, at 1 & 9.

[22] *See* IDC, U.S. SMB Telecom Voice and Data Services 2010-2013 Forecast, Doc #224295, Aug. 2010, at 18, Table 5.

[23] *See* IDC, U.S. Telecommunications Services 2010-2014 Forecast, Doc #223323, July 2010, at 8, Table 5.

more employees).[24] Corporate Ethernet services are estimated to account for approximately $3.4 billion in revenues in 2010, with this total expected to more than double by 2014.[25]

## III. FOR ALL CATEGORIES OF BUSINESS CUSTOMERS AND SERVICES, COMPETITION IS INTENSIFYING, INVESTMENT IS GROWING, AND NEW TECHNOLOGIES ARE BEING DEPLOYED

Regardless of where the Commission looks along the spectrum that comprises the business broadband marketplace, it will find extensive competition, investment, and new technologies. Indeed, the Commission has repeatedly found that there is extensive broadband competition for all types of business customers.[26] As demonstrated below, all of these findings apply with even greater force today.

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[24] *See* Kneko Burney, Compass Intelligence, *US Business Telecom Expenditures by Category & Size of Business, 2009-2014* (Sept. 2010).

[25] *See, e.g.*, IDC, U.S. Carrier Ethernet Services 2010-2014 Forecast, Doc #224544, Aug. 2010, at 5, Table 1.

[26] *See, e.g.*, *Qwest Petition for Forbearance Under 47 U.S.C. § 160(c) from Title II and Computer Inquiry Rules with Respect to Broadband Services*, Memorandum Opinion and Order, 23 FCC Rcd 12260, ¶ 26 (2008) ("[O]ther available data suggest that there are a number of competing providers for [enterprise broadband services] nationwide and the marketplace generally appears highly competitive. In particular, the record shows there are many significant providers of Frame Relay services, ATM services, and Ethernet-based services. Moreover . . . we find that competitors either are providing, or readily could enter the market to provide, these services.") (footnotes omitted); *AT&T Inc. and BellSouth Corporation Application for Transfer of Control*, Memorandum Opinion and Order, 22 FCC Rcd 5662, ¶ 62 (2007) ("We find that competition for medium and large enterprise customers should remain strong after the merger because medium and large enterprise customers are sophisticated, high-volume purchasers of communications services, including in particular high-capacity services, and because there will remain a significant number of carriers competing in the market."); FCC, *Connecting America: The National Broadband Plan*, at 211 (Mar. 2010), http://download.broadband.gov/plan/national-broadband-plan.pdf ("Most businesses in the United States, physician offices included, have two choices of broadband service categories: mass-market 'small business' solutions or Dedicated Internet Access (DIA), such as T-1 or Gigabit Ethernet service.") (footnotes omitted).

### A. Verizon's Business Broadband Offerings

As an initial matter, Verizon is investing heavily in and deploying broadband services to business customers of all sizes.[27] Verizon provides these services over a wide range of wireline and wireless facilities, including its FiOS network, 3G (and later this year, 4G) wireless network, traditional copper plant, and metropolitan fiber networks. Verizon offers many of these broadband services not only within its traditional local exchange footprint, but also outside of that footprint in competition with AT&T, Qwest, and other incumbent and competitive carriers. Appendix [A] contains detailed descriptions of Verizon's extensive business broadband offerings; a few examples include the following:

*FiOS Internet for Business* – Verizon is investing $23 billion to move beyond its copper network in order to make its fiber-to-the-premises network, known as FiOS, available to 18 million premises by 2012, including a large number of businesses.[28] FiOS enables Verizon to offer a much greater range of services and innovative products to consumers and business alike. Moreover, Verizon can provide service upgrades and greater speeds to consumers, including businesses, simply by upgrading the electronics attached to the network, rather than needing to

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[27] Verizon also is actively engaged in promoting Smart Grid deployment through a variety of means, from partnering with utilities to deploy smart wireless meters in customer homes to linking its own power-generating facilities to an electrical utility's system to reduce energy costs. *See* Comments of Verizon and Verizon Wireless, *Implementing the National Broadband Plan by Studying the Communications Requirements of Electric Utilities to Inform Federal Smart Grid Policy*, DOE-HQ-2009-0003-0835 (Dep't of Energy filed July 12, 2010).

[28] *See* Verizon, *2Q Investor Quarterly Second Quarter 2010*, at 8 (July 23, 2010), http://investor.verizon.com/financial/quarterly/vz/2Q2010/2Q10Bulletin.pdf; Thomson StreetEvents, *VZ – Verizon at Oppenheimer & Co. Telecommunication, Media & Technology Conference*, Final Transcript, at 8 (Aug. 11, 2010), http://investor.verizon.com/news/20100811/20100811_transcript.pdf (statement by Verizon Communications Inc. EVP and CFO John Killian: "Our end objective is to build to about 18 million. We will probably get to the 18 million in 2012, somewhere in that range."). As of June 30, 2010, Verizon's FiOS network passed 15.9 million homes and businesses (including portions sold to Frontier Communications). *See* Verizon, *Verizon FiOS – Fact Sheet*, http://newscenter.verizon.com/kit/fios-symmetrical-internet-service/all-about-fios.html.

replace the underlying fiber. Verizon's FiOS Business services offer "download speeds of up to 50 megabits per second and blazing symmetrical speeds of up to 35 Mbps."[29] Verizon also offers a range of business-level features such as "[b]usiness-grade e-mail," "[p]remium installation [and] 24/7 technical support," "[s]tatic IP options," and the "Verizon Internet Security Suite."[30]

*Verizon Business DSL* – Verizon offers two flavors of business-class DSL service: Internet DSL Solo[31] for single-users or small offices and Internet DSL Office to provide a "multi-user access" solution.[32] Each of these offerings provides a range of speeds (up to 6 Mbps) and business features such as static IP addresses and 24x7 Verizon Business technical support.[33]

*Internet Dedicated Access* – Verizon provides high-speed dedicated Internet access via Private line, Ethernet access, or its Multilink Frame Relay Service. Verizon offers services over its Ethernet-based metro Area Network, which is built on Verizon's local fiber/SONET network and interconnected with its global Internet backbone.[34] Verizon offers speeds from fractional T-

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[29] Verizon Business, *Fact Sheet: FiOS Internet for Business*, http://www.verizonbusiness.com/resources/factsheets/fs_fios-internet-for-business_en_xg.pdf.

[30] *Id.*

[31] Verizon Business, *Broadband*, http://www.verizonbusiness.com/Products/networking/internet/broadband/dsl.xml.

[32] *Id.*

[33] *Id.*

[34] The Insight Research Corporation, *Private Line and Wavelength Service 2008 – 2013*, at 130 – 131 (Sept. 2008), *available at* http://www.insight-corp.com ("Verizon Business offers both Metro and National Private Line services. Metro Private Line is available in speeds from T1 to OC-192. The Metro Private Line is available in more than 34 states across the nation over Verizon's own facilities. . . . Verizon Business offers an Ethernet Private Line service for both local and long distance applications. It provides point-to-point Ethernet connectivity at speeds ranging from 10 Mbit/s to full rate Gigabit. It is a fully managed service that is provisioned over Verizon's next-generation SONET infrastructure in the local loop and interoffice network to connect the endpoints."); Verizon Business, *Fact Sheet: Internet Dedicated Access*, http://www.verizonbusiness.com/resources/whitepapers/wp_internet-dedicated-access_en_xg.pdf

1 all the way up to OC-192, and a wide range of other service configurations and business-class features.[35] Verizon enables customers to select from burstable, price-protected, or tiered bandwidth options. [36]

*Mobile Wireless Broadband* – Verizon Wireless operates an EV-DO wireless broadband network that currently reaches more than 289 million Americans.[37] And its next-generation 4G Long Term Evolution (LTE) wireless network will soon be widely available, serving up to 38 markets covering 110 million people by the end of this year, and the rest of its coverage area by 2013.[38] Verizon Wireless provides business users with a variety of innovative wireless services, and has specific wireless plans and applications designed for small business,[39] large enterprise,[40]

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("As an alternative to traditional access methods, Ethernet technology provides connections from 1 Mbps up to 10,000 Mbps (10G) to Verizon's expansive global Internet backbone using standard Ethernet handoffs.").

[35] Verizon Business, *Fact Sheet: Internet Dedicated Access*, http://www.verizonbusiness.com/resources/whitepapers/wp_internet-dedicated-access_en_xg.pdf.

[36] *Id.*

[37] Verizon Wireless, *Best Network: Network Facts*, http://aboutus.vzw.com/bestnetwork/network_facts.html ("Mobile Broadband customers in enhanced broadband wireless coverage areas can expect average download speeds of 600 kilobits per second (kbps) to 1.4 megabits and average upload speeds of 500-800 kbps. As of June 2007, Rev. A technology was available throughout the entire EV-DO network. The company's 3G (third generation) network – the nation's largest and most reliable – is now available to 289 million people across the country.").

[38] Verizon Wireless News Release, *Verizon Launches 4G LTE in 38 Major Metropolitan Areas by the End of the Year* (Oct. 6, 2010), http://news.vzw.com/news/2010/10/pr2010-10-01c.html; Verizon Wireless, *News Center: LTE Information Center*, http://news.vzw.com/LTE/Overview.html.

[39] Verizon Wireless, *Mobile Office Solutions*, http://solutions.vzwshop.com/onthemap/#/?region=HOME.

[40] Verizon Wireless, *Secure, Global IT and Communications Solutions for Business*, http://www.verizonwireless.com/b2c/splash/enterprise.jsp.

government,[41] and wholesale customers.[42] These services also may be tailored to specific industry sectors, including utilities, construction, education, and health care.[43] To cite a few examples of such offerings – which are described in greater detail in Appendix [A] – Verizon Wireless offers business customers wireless broadband services such as wireless email and Internet access[44] that may be accessed over broadband-enabled phones or other devices, USB modems, PC cards, and netbooks,[45] as well as through MiFi, an Intelligent Mobile Hotspot.[46] Verizon Wireless also offers a variety of business applications such as Enterprise Messaging, Fleet Administrator, Managed Mobility, Field Force Manager, Group Communications, Push to Talk, and Wireless Office.[47] Moreover, Verizon Wireless offers M2M services that provide businesses innovative ways to automate and gain greater control over their operations.[48]

Verizon Wireless also is engaged in numerous efforts to develop additional innovative services, applications, and devices. These include its Open Development program, which encourages third-party developers to produce new devices and applications; the Joint Innovation Lab, a joint venture with China Mobile, SoftBank Mobile, and Vodafone that will promote the

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[41] Verizon Wireless, *Government: Overview*, http://b2b.vzw.com/govt/overview.html.

[42] Verizon Wireless, *Open Development Wholesale Solutions*, http://www.verizonwireless.com/b2c/aboutUs/reseller/index.jsp.

[43] Verizon Wireless, *Industry Solutions*, http://b2b.vzw.com/industrysolutions/index.html.

[44] Verizon Wireless, *Nationwide Email for Business Plans*, http://b2b.vzw.com/productsservices/wirelessemail/voicedatacallingplans.html; Verizon Wireless, *Mobile Office Solutions*, http://b2b.vzw.com/productsservices/.

[45] Verizon Wireless, *Mobile Broadband*, http://www.verizonwireless.com/b2c/mobilebroadband/.

[46] Verizon Wireless, *Mobile Broadband: Intelligent Mobile Hotspot*, http://www.verizonwireless.com/b2c/mobilebroadband/?page=products_mifi.

[47] Verizon Wireless, *Business Applications*, http://b2b.vzw.com/productsservices/customapplications/index.html.

[48] Verizon Wireless, *Machine to Machine Services*, http://b2b.vzw.com/machinetomachine/index.html.

development of new mobile technologies, applications, and services; and the Verizon Wireless LTE Innovation Center – an "incubator" with development labs and testing environments to assist third-party device and application developers to create innovative new products and services for Verizon's 4G wireless network.

### B. Cable Business Broadband Services

One of the most dramatic developments in the business marketplace over the past few years has been the extensive investments made by cable companies to provide broadband services to businesses. Each of the major cable operators has recognized that a significant number of business customers – particularly smaller and medium-sized businesses – already are passed by their networks.[49] Cable companies have accordingly invested heavily both to expand their networks to reach these business customers, and also to add the features and services that business customers want. Appendix [B] contains detailed descriptions of the business broadband services that each of the major cable operators now offers. Every major cable operator, as detailed below, now reports significant revenues from business services, and states that business

[49] *See, e.g.*, *Q2 2010 Time Warner Cable Inc. Earnings Conference Call – Final*, FD (Fair Disclosure) Wire, Transcript 080510a3164942.742 (Aug. 5, 2010) (statement by Time Warner Cable, Inc. COO Landel Hobbs) (there are 2.5 million to 3 million businesses in TWC's footprint that have fewer than 1,000 employees and that it is capable of targeting); Craig Moffett et al., BernsteinResearch, *U.S. Cable: Getting Down to Business . . . A Discussion with Cox Communications [Conference Call Transcript]*, at 11 (Sept. 28, 2010) (statement by Cox Business SVP Phil Meeks: "We've earned the business of over 250, 000 commercial customers."); *Cablevision Systems Corp. at Bank of America Merrill Lynch Media, Communications & Entertainment Conference – Final*, FD (Fair Disclosure) Wire, Transcript 091610a3367602.702 (Sept. 16, 2010) (statement by Cablevision Systems Corp. COO Tom Rutledge: "[Commercial] penetration is over 20% and it continues to grow."); Bill Stemper, President, Comcast Business Services, Analyst and Investor Day (May 1, 2007) (map depicting Small and Medium Businesses – which Comcast defines as those with fewer than 50 employees – that are "close" to Comcast's footprint in the Baltimore metropolitan area); *Charter at Deutsche Bank Securities Leveraged Finance Conference – Final*, FD (Fair Disclosure) Wire, Transcript 092508ak.717 (Sept. 25, 2008) (statement by Charter Communications Inc. CEO Neil Smit: "We've got about $5.5 billion of business Telecom spend within 600 feet of our network, so it's accessible.").

services represent a key opportunity for future revenue growth. Although cable operators have generally focused first on smaller business customers, they are now rapidly moving "upmarket" to serve mid-sized and larger business customers.[50]

First, cable operators offer business customers cable modem services, typically with speeds that range from 5 to 101 Mbps downstream, and from 768 Kbps to 15 Mbps upstream.[51] Cable operators tout the fact that these are "business class" services and include features such as email, web hosting, file backup, security, and technical support, that business customers demand.[52] In addition, each of the major cable operators is upgrading its network to DOCSIS

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[50] *See* IDC, 2010 National Cable Show: MSOs Outline Business Strategy, Doc #223568, June 2010, at 1 ("Moving beyond the 20 employee business ceiling is a recurring theme in cable commercial strategy. . . . One of the strategies discussed was to move into vertical markets such as healthcare and government and the financial industry."); Vince Vittore, Yankee Group, *US Cable Operators Venture Into the Mid-Tier Business Market* (June 25, 2010) ("After years of talking about moving into the mid-tier market, it appears that the latter half of 2010 and into 2011 will be when MSOs finally make their push into larger businesses.").

[51] *See* Comcast Business Class, *Business Internet Service - Plans & Pricing*, http://business.comcast.com/internet/plans_100.aspx?r=http%3A//business.comcast.com/internet/details.aspx (listing plans with download/upload speeds of 12 Mbps/2 Mbps, 22 Mbps/5 Mbps, 50 Mbps/10 Mbps, and 100 Mbps/10 Mbps); Time Warner Cable Business Class, *High Speed Internet Access: Features*, https://www.twcbc.com/NationalSales/Products/ProductDetails/high-speed-internet-access.ashx (listing National Sales plans with download/upload speeds of 7 Mbps/768 Kbps, 10 Mbps/1 Mbps, 10 Mbps/1.5 Mbps, and 15 Mbps/2 Mbps); Cox Communications, *Data*, http://ww2.cox.com/business/northernvirginia/data/pricing.cox (listing Data & Internet Pricing & Plans Serving Northern Virginia with download/upload speeds of 5 Mbps/1 Mbps, 10 Mbps/2 Mbps, 15 Mbps/3 Mbps, 25 Mbps/4 Mbps, and 50 Mbps/5 Mbps); Charter Business, *Charter Business Internet*, http://www.charter-business.com/Internet-Plus.aspx (listing plans with download/upload speeds of 8 Mbps/1 Mbps, 16 Mbps/2 Mbps, and 25 Mbps/3 Mbps); Optimum Business, *Optimum Online Business: Packages*, http://www.optimumbusiness.com/online/packages.jsp (listing plans with download/upload speeds of 15 Mbps/2 Mbps, 30 Mbps/5 Mbps, and 101 Mbps/15 Mbps).

[52] *See* Comcast Business Class, *Business Internet Service - Plans & Pricing*, http://business.comcast.com/internet/plans_100.aspx?r=http%3A//business.comcast.com/internet/details.aspx (listing features such as Internet security, Microsoft Communications Tools, web hosting, and technical support); Cox Communications, *Data*, http://ww2.cox.com/business/northernvirginia/data/pricing.cox (listing features such as online backup and security); Optimum Business, *Optimum Online Business: Packages*, http://www.optimumbusiness.com/online/packages.jsp (listing features such as email accounts

3.0 technology, with many already between two-thirds and 100 percent complete.[53] For example, Cablevision has deployed DOCSIS 3.0 to 100 percent of its footprint.[54] Comcast already reaches more than 80 percent of its footprint;[55] Cox reaches more than 50 percent of its footprint, with plans to reach more than two-thirds by the end of 2010; [56] Charter reaches approximately 30 percent of its footprint today and plans to reach approximately 50 percent by year-end;[57] and Time Warner Cable has deployed DOCSIS 3.0 service to nearly a third of its

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and internet security package); Time Warner Cable Business Class, *High Speed Internet Access: Overview*, https://www.twcbc.com/NationalSales/Products/ProductDetails/high-speed-internet-access.ashx (listing features such as email, backup, and domain name); Charter Business, *Charter Business Internet*, http://www.charter-business.com/Internet-Plus.aspx (listing features such as email, web hosting, technical support, and IP Addresses).

[53] *See* Jessica Reif Cohen, Bank of America/Merrill Lynch, *Battle for the Bundle: Best of Times. . . Worst of Times*, at 9, Table 6 (Aug. 23, 2010) (expected DOCSIS 3.0 roll-out by YE2010); *see also* Rebecca Arbogast & David Kaut, Stifel Nicolaus, *Policy Day Takeaways: Targeted N.N. Bill Tough, Accord Possible; Spectrum Hot*, at 4 (June 28, 2010) (reporting near-term estimates of 90+% availability of DOCSIS 3.0); IDC, Market Analysis: U.S. Consumer Broadband Services 2010-2014 Forecast, Doc #223237, May 2010, at 6 (estimating that, at the end of 2009, approximately 40 percent of cable operators' networks were upgraded to DOCSIS 3.0).

[54] *See* CableLabs, *D3 – DOCSIS 3.0*, http://www.cablelabs.com/cablemodem/downloads/docsis_30.pdf.

[55] FactSet CallStreet, *Comcast Corp. – Q2 2010 Earnings Call*, Corrected Transcript, at 2 (July 28, 2010), http://files.shareholder.com/downloads/CMCSA/986390536x0x391044/4414f8c7-a69e-4b94-9753-909a5f680991/Comcast_Transcript_7.28.10.pdf (statement by Comcast Corp. Chairman and CEO Brian Roberts); *see also* Thomson StreetEvents, *CMCSA – Comcast Presentation at the Bank of America Merrill Lynch US Media Conference in London*, Final Transcript, at 8 (June 10, 2010), http://files.shareholder.com/downloads/CMCSA/986390536x0x383063/425658d6-9c54-41b8-bf8e-f5946d695395/Comcast_BOAtranscript_6.21.10.pdf (statement by Comcast Corp. SVP of Investor Relations Marlene Dooner: "[C]lose to 20% of [Comcast's] customers . . . take services that are 16 MB or above," and the company will begin to offer "100 plus MB product as [it] finish[es] the deployment of DOCSIS 3.0.").

[56] Craig Moffett et al., BernsteinResearch, *U.S. Cable: Getting Down to Business . . . A Discussion with Cox Communications [Conference Call Transcript]*, at 14 (Sept. 28, 2010) (statement by Cox Business VP Product Development and Management Kristine Faulkner).

[57] *Q2 2010 Charter Communications Inc. Earnings Conference Call – Final*, FD (Fair Disclosure) Wire, Transcript 080410a3164999.799 (Aug. 4, 2010) (statement by Charter

footprint.[58] DOCSIS 3.0 technology enables cable operators to offer speeds of 152 Mbps or more,[59] and cable operators have accordingly promoted these services as ideal for business customers that have high demand for data services.[60]

Second, in addition to traditional cable modem services, cable operators are able to leverage their investment to provide Ethernet services. For example, Cox states that its investment in DOCSIS 3.0 provides "a robust vehicle for delivery of, not only Internet services, but Ethernet services," further noting that it's now positioned to offer "higher tiered services within our Internet portfolio as well."[61] "According to Vertical Systems Group, Cox Business is

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Communications Inc. CEO Mike Lovett: "DOCSIS 3.0 is available to nearly one third of our footprint. And we plan to have it available to about half of our footprint by the end of this year."); *see also* Charter News Release, *Charter Reports Second Quarter 2010 Financial and Operating Results*, at 5 (Aug. 4, 2010), http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9NTY0NjR8Q2hpbGRJRD0tMXxUeXBlPTM=&t=1.

[58] *See* Mike Farrell, *Hobbs: TWC Adapts to Its Customers*, Multichannel News (May 24, 2010), http://www.multichannel.com/article/452977-Hobbs_TWC_Adapts_To_Its_Customers.php; *Q2 2010 Time Warner Cable Inc. Earnings Conference Call – Final*, FD (Fair Disclosure) Wire, Transcript 080510a3164942.742 (Aug. 5, 2010) (statement by Time Warner Cable, Inc. COO Landel Hobbs).

[59] *See* CableLabs, *D3 – DOCSIS 3.0*, http://www.cablelabs.com/cablemodem/downloads/docsis_30.pdf; John J. Downey & Brady Volpe, *The Need for Speed: DOCSIS 3.0 Downstream Bonding Issues*, Communications Technology (Mar. 1, 2009), http://www.cable360.net/ct/strategy/emergingtech/34304.html.

[60] *See e.g.*, Cox Communications Press Release, *Cox Expands DOCSIS 3.0 Reach to Northern Virginia* (May 5, 2009), http://cox.mediaroom.com/index.php?s=43&item=430 ("With download speeds up 50 Mbps and 5 Mbps uploads, Cox Business Internet helps optimize support for corporate e-mail, online research and Web-based business applications. While Cox Business offers several fiber-based advanced solutions with higher speeds, the premium package provides an additional option for small to mid-sized businesses."); *Comcast Corporation at Bank of America Merrill Lynch Media, Communications & Entertainment Conference – Final*, FD (Fair Disclosure) Wire, Transcript 091510a3342322.722 (Sept. 15, 2010) (statement by Comcast Corp. CFO Mike Angelakis: "[T]he DOCSIS 3.0 project I think is proving to be a very successful project for us both from a residential standpoint and from a business standpoint.").

[61] Craig Moffett et al., BernsteinResearch, *U.S. Cable: Getting Down to Business . . . A Discussion with Cox Communications [Conference Call Transcript]*, at 14 (Sept. 28, 2010) (statement by Cox Business VP Product Development and Management Kristine Faulkner); *see also id.* at 19 (According to Cox Business SVP Phil Meeks, Cox Business is also "repurposing

the fourth largest provider of business Ethernet services in the U.S. based on customer ports."[62] Other major operators such as Comcast, Cablevision, and Time Warner Cable all provide similar business Ethernet services.[63] According to Vertical Systems, cable operators are now "looking at out-of-region expansion beyond their traditional service footprints through direct network build-outs, partnerships and Ethernet exchanges, which will lead to even more competition against competitive providers."[64]

Third, in addition to the cable modem and Ethernet services that are typically offered over their HFC plant, cable operators also provide high-end broadband services over fiber networks. For example, "Optimum Lightpath, which began focusing solely on Ethernet-based services in 2005," operates a "100% fiber optic network . . . comprised of over 5,300 route miles

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the existing physical infrastructure from an HFC perspective (the hybrid fiber coax), of putting higher level, higher grade commercial services on top of that existing physical footprint that we already had in place from an HFC perspective.").

[62] *See Cox Business Revs Up Communications Infrastructure for Barrett-Jackson's Las Vegas Auto Auction*, PR Newswire (Sept. 13, 2010), http://www.prnewswire.com/news-releases/cox-business-revs-up-communications-infrastructure-for-barrett-jacksons-las-vegas-auto-auction-102804594.html.

[63] Comcast Business Class, *Ethernet Data Services*, http://business.comcast.com/large/ethernet.aspx; Comcast Business Class, *Fiber-Optic Network*, http://business.comcast.com/about/network.aspx (Comcast offers Ethernet with "symmetrical dedicated bandwidth configurable from 1Mbps to 1Gbps" through a "growing Hybrid Fiber-Coax network, with more than 145,000 miles of fiber."); Optimum Lightpath, *Optimum Lightpath Metro Ethernet Technology*, http://www.optimumlightpath.com/ourNetwork_metroEthernet.shtml (Cablevision's Ethernet speeds range from "10 to 1000 Mbps"); Time Warner Cable Business Class, *Ethernet*, https://www.twcbc.com/NationalSales/Products/Ethernet/default.ashx (Time Warner Cable's Metro Ethernet services are "scalable" with "bandwidth up to 100 Mbps.").

[64] *MSO Business Services*, CED Magazine (May 2010), http://www.cedmagazine.com/WorkArea/showcontent.aspx?id=170506 (The effects of cable's competition in this area can already be seen as "the deployment of services such as VoIP and the adoption of new technologies such as carrier Ethernet and DOCSIS 3.0 have helped cable eat into the telcos' revenue streams.").

(208,000 fiber miles)" in the New York metro area.[65] Time Warner Cable and Bright House Networks both offer dedicated Internet access "provisioned on dedicated fiber optic facilities" with speeds ranging from 2 Mbps to 1 Gbps.[66] Charter also claims to have deployed a "state-of-the art" fiber optic network "focused on business."[67] Charter's "Ethernet-based" service offers "symmetrical access service with speeds from 2Mbps up to 1Gbps, with the ability to scale in increments of as little as 1Mbps."[68]

Cable operators are not merely offering a wide range of commercial services, but have experienced considerable success, and are continuing to invest heavily to make even further strides.[69] The top four cable operators alone now report over $3 billion in commercial services

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[65] Todd Spangler, *Cablevision's Optimum Lightpath Hooks into Metro Ethernet Exchange*, Multichannel News (July 20, 2010), http://www.multichannel.com/article/454995-Cablevision_s_Optimum_Lightpath_Hooks_Into_Metro_Ethernet_Exchange.php; Optimum Lightpath, *The Network*, http://www.optimumlightpath.com/ourNetwork_main.shtml.

[66] Time Warner Cable Business Class, *Dedicated Internet Access: Tech Specs*, https://www.twcbc.com/NationalSales/Products/ProductDetails/dedicated-internet-access.ashx; Bright House Networks Business Solutions, *Dedicated Internet Access (DIA): Tech Specs*, http://business.brighthouse.com/data_and_internet/dedicated_internet_access/.

[67] Charter Business, *Who We Are*, at 5, http://www.charter-business.com/resources/file/Charter_Business_Fiber%20Presentation_FINAL.pdf.

[68] Charter Business, *Charter Business Fiber Internet*, http://www.charter-business.com/fiber-internet.aspx.

[69] *See e.g.*, *Q2 2010 Charter Communications Inc. Earnings Conference Call - Final*, FD (Fair Disclosure) Wire, Transcript 080410a3164999.799 (Aug. 4, 2010) (statement by Charter Communications Inc. CEO Mike Lovett: "I believe there is a significant additional opportunity for Charter in the commercial space and we are prioritizing our investments and resources to leverage our infrastructure to drive further commercial growth."); *Q2 2010 Time Warner Cable Inc. Earnings Conference Call - Final*, FD (Fair Disclosure) Wire, Transcript 080510a3164942.742 (Aug. 5, 2010) (statement by Time Warner Cable, Inc. Senior EVP & CFO Rob Marcus: "Commercial capital expenditures were $233 million in the first half [2010], a more than 60% increase from the prior year period as we invested in commercial growth initiatives including sell [*sic*] backhaul. For the full year, we continue to expect capital expenditures to be less than $3 billion."); James M. Ratcliffe, et al., Barclays, *Time Warner Cable Inc.*, at 6 (Aug. 5, 2010) ("We expect 2010E capex at TWC of approximately $2.9BN, and we expect expenditures for commercial services deployment and increased digital deployments to keep capex roughly at current levels for the foreseeable future."); Mike McCormack, et al.,

revenues, and claim that they are growing this segment by approximately 10 to 50 percent a year.[70] Cox – which was one of the first cable operators heavily to target business customers – estimates that it has already captured at least 15 percent of the approximately $7 billion in "SMB revenues" in its footprint, and is still achieving rapid yearly growth.[71] Analysts estimate that

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J.P. Morgan, *Comcast Corp*, at 3 (Feb. 4, 2010) ("In addition, [Comcast's] management noted a 51% increase in Commercial Services capital expense in 2009, to $350M. Given continued focus on this segment and the backhaul opportunity, we expect business services spending to remain elevated in 2010.").

[70] Craig Moffett et al., BernsteinResearch, *U.S. Cable: Getting Down to Business . . . A Discussion with Cox Communications [Conference Call Transcript]*, at 11 (Sept. 28, 2010) (statement by Cox Business SVP Phil Meeks: "[W]e're on track to be a $1 billion revenue stream this year."); *Comcast Corporation at Goldman Sachs Communacopia XIX Conference – Final*, FD (Fair Disclosure) Wire, Transcript 092210a3344569.769 (Sept. 22, 2010) (statement by Comcast Corp. CFO Mike Angelakis: "Right now, we are in, clearly, the execution mode of the S part of the SME aspects. That business today, which is not very old, is about a $1.2 billion run rate, good margins, and it is growing at 40% to 50% per annum."); *Time Warner Cable Inc. at Bank of America Merrill Lynch US Media Conference – Final*, FD (Fair Disclosure) Wire, Transcript 061010a3131049.749 (June 10, 2010) (Time Warner Cable, Inc. Chairman, President & CEO Glenn Britt reported approximately $900 million in commercial marketplace revenue last year); *Q2 2010 Charter Communications Inc. Earnings Conference Call –Final*, FD (Fair Disclosure) Wire, Transcript 080410a3164999.799 (Aug. 4, 2010) (statement by Charter Communications Inc. CFO Kevin Howard: "Commercial revenues increased 10% to $121 million"); *Q2 2010 Time Warner Cable Inc. Earnings Conference Call – Final*, FD (Fair Disclosure) Wire, Transcript 080510a3164942.742 (Aug. 5, 2010) (statement by Time Warner Cable, Inc. Senior EVP & CFO Rob Marcus: "Commercial subscription revenue growth accelerated to over 20% in the second quarter, on pace to achieve the better than 20% full year commercial revenue growth"); *Q2 2010 Charter Communications Inc. Earnings Conference Call – Final*, FD (Fair Disclosure) Wire, Transcript 080410a3164999.799 (Aug. 4, 2010) (statement by Charter Communications Inc. CEO Mike Lovett: "Moving to charter business. We delivered 10% increase in revenue increase year-over-year reflecting strength in our small and medium business service offerings.").

[71] Craig Moffett et al., BernsteinResearch, *U.S. Cable: Getting Down to Business . . . A Discussion with Cox Communications [Conference Call Transcript]*, at 1 (Sept. 28, 2010) ("Among all cable operators, Cox has been the most successful [in the SMB market], after being the first to enter the market for business services 17 years ago. Cox's SMB revenues have grown from just $100M in 2000 to $1B in 2009, out of what it considers to be a $7 billion wireline commercial services opportunity within its footprint. Cox's current SMB revenues are comparable in size to the commercial revenues of Comcast and Time Warner Cable, though this has been achieved on a footprint just 20% the size of Comcast's and 35% the size of Time Warner Cable's."); *see also id.* at 11 (statement by Cox Business SVP Phil Meeks: Cox Business is "on trajectory to be a $2 billion business within the next six years"); *see also id.* at 12

Cablevision's commercial data penetration rate is nearly 29 percent as of the third quarter of 2010, and expect it to grow to 33.5 percent by the end of 2011.[72] Other cable operators likewise recognize the significant opportunity in commercial services.[73] Analysts also expect this growth to continue.[74]

Finally, cable operators are reporting that, after years of focusing on the lower-to-middle tiers of the business broadband marketplace, they are now investing to go after higher-end business customers. For example, Comcast states that it is "heavily investing today particularly in business services," that until recently it has been "focused on" the "S [small] part of

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("About 80% of our customers come from the low end of the SMB marketplace. And we define that as companies that have 19 and fewer employees.").

[72] Benjamin Swinburne, et al., Morgan Stanley, *Cablevision Systems: Remains Top Cable Pick*, at 3, Exhibit 1 (Aug. 15, 2010); *see also Cablevision Systems Corp. at Bank of America Merrill Lynch Media, Communications & Entertainment Conference - Final*, FD (Fair Disclosure) Wire, Transcript 091610a3367602.702 (Sept. 16, 2010) (statement by Cablevision Systems Corp. COO Tom Rutledge) (Cablevision's penetration "is over 20% and it continues to grow. And it continues to grow steadily . . . and the rate of growth hasn't slowed down even with the economic situation. So there is a situation where, even though there are a lot of businesses ceased to exist, small businesses, the growth rate has been steady and all through even the depths of the recession that has been true.").

[73] *See Time Warner Cable Inc. at Bank of America Merrill Lynch Media, Communications & Entertainment Conference – Final*, FD (Fair Disclosure) Wire, Transcript 091510a3359408.708 (Sept. 15, 2010) (statement by Time Warner Cable, Inc. Senior EVP & CFO Rob Marcus: "When I look at that Commercial business, we think that there's probably $20 billion of opportunity there. And with a $1 billion run rate, it means that there's an awful lot of untapped opportunity."); *Comcast Corporation at Bank of America Merrill Lynch Media, Communications & Entertainment Conference – Final*, FD (Fair Disclosure) Wire, Transcript 091510a3342322.722 (Sept. 15, 2010) (statement by Comcast Corp. CFO Mike Angelakis: "We look at that [small business] marketplace as having between $10 billion and $15 billion of total market, so we're, give or take, 10%. We think there's lots of upside in that market and it has real momentum."); *Q2 2010 Charter Communications Inc. Earnings Conference Call – Final*, FD (Fair Disclosure) Wire, Transcript 080410a3164999.799 (Aug. 4, 2010) (statement by Charter Communications Inc. CEO Mike Lovett: "I believe there is a significant additional opportunity for Charter in the commercial space and we are prioritizing our investments and resources to leverage our infrastructure to drive further commercial growth.").

[74] *See, e.g.*, IDC, 2010 National Cable Show: MSOs Outline Business Strategy, Doc #223568, June 2010 ("IDC research shows that cable operators are well positioned to continue to increase market share at the low end of the business market.").

commercial services," and that it is now "migrating pretty quickly into the M, the middle-sized part of business services," which Comcast defines as entities with between 20 and 250 employees.[75] Comcast states that "we are deploying metro Ethernet, we are investing in that, we are hiring people, we are starting to sell services. . . . We are extending the fiber, which allows us to, number one, go after more of the S [small] part. It helps our residential business and it allows us to go after the medium-sized part."[76] Time Warner Cable states that it is "targeting, at the moment, primarily smaller businesses," but it defines that category to include business "up to 1,000 employees," and further states that "as we go along, we may move more up to larger businesses."[77] Cox states that its strategy includes "moving up market from the SMB space," to target "large local type of companies that are geographically dense and geographically concentrated within our footprint."[78] Cablevision claims to have obtained the business of over 70 percent of the hospitals in its footprint, leveraging its fiber network.[79]

### C. Other Competitive Wireline Business Broadband Services

Business customers continue to use a very wide range of wireline broadband services, at varying speeds and price. One constant, however, is that there is extensive competition – at both the wholesale (*i.e.*, facilities-based) and retail levels – for each of these types of services.

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[75] Thomson StreetEvents, *CMCSA – Comcast Corporation at Goldman Sachs Communacopia XIX Conference*, Final Transcript, at 6 (Sept. 22, 2010) (statement by Comcast Corp. CFO Mike Angelakis).

[76] *Id.* at 8 (statement by Comcast Corp. CFO Mike Angelakis).

[77] Thomson StreetEvents, *TWC – Time Warner Cable Inc. at Goldman Sachs Communacopia XIX*, at 10 (Sept. 22, 2010) (statement by Time Warner Cable, Inc. Chairman, President, and CEO Glenn Britt).

[78] Craig Moffett et al., BernsteinResearch, *U.S. Cable: Getting Down to Business . . . A Discussion with Cox Communications [Conference Call Transcript]*, at 12 (Sept. 28, 2010) (statement by Cox Business SVP Phil Meeks).

[79] *See* IDC, 2010 National Cable Show: MSOs Outline Business Strategy, Doc #223568, June 2010, at 2.

For example, some business customers are using DSL services that come in many different flavors from a variety of competitive providers, such as Broadview Networks,[80] Deltacom,[81] Integra Telecom,[82] and One Communications.[83] As IDC notes, "[l]ow-cost broadband is getting faster and faster."[84]

Other business customers use a range of services that rely on high-speed connections that connect a business to any dedicated point, including the Internet. Analysts have for years have observed an ongoing shift from legacy services such as ATM and Frame Relay, to newer services such Gigabit Ethernet,[85] which offer much higher speeds to meet the rising demand of business customers.[86] Ethernet services offer business customers considerable advantages over

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[80] *See* Broadview Networks, *Broadspeed ADSL & SDSL*, http://www.broadviewnet.com/Products_Solutions/ADSL_SDSL.asp.

[81] *See* Deltacom, *Small Business Internet*, http://www.deltacom.com/small_business_internet.html.

[82] *See* Integra Telecom, *DSL for Businesses*, http://www.integratelecom.com/services/Broadband.php.

[83] *See* One Communications, *Business Solutions: DSL Service*, http://www.onecommunications.com/dsl.aspx.

[84] IDC, U.S. SMB Telecom Voice and Data Services 2010-2013 Forecast, Doc #224295, Aug. 2010, at 15, Table 4.

[85] *See*, *e.g.*, IDC, U.S. Carrier Ethernet Services 2009-2013 Forecast, Doc #219177, July 2009, at 4 ("Customers have migrated to Ethernet from many services, including private line connectivity, frame relay and, to a lesser degree, IP VPN and ATM networks."); David Coleman et al., RBC Capital Markets, *Qwest Communications*, at 6 (Jan. 11, 2010) ("Within data, customers are transitioning toward IP/MPLS (iQ Networking) and away from legacy frame relay and ATM transport."); IDC, U.S. SMB Telecom Voice and Data Services 2010-2013 Forecast, Doc #224295, Aug. 2010, at 20 (noting "rapidly unfolding transition from legacy TDM technology to IP-based services").

[86] Gigabit services, as the name implies, offer services at speeds anywhere from 1 Gbps to 100 Gbps. By comparison, ATM services are typically offered at speeds up to 622 Mbps, while Frame Relay services are typically offered at speeds of 1.544 Mbps to 45 Mbps. *See* David Gutierrez, *Ethernet Comes of Age*, CEDMagazine.com (Mar. 16, 2010), http://www.cedmagazine.com/article.aspx?id=169006&LangType=1033; FCC Public Notice, *Commission Seeks Comment on Draft Eligible Services List for Schools and Libraries Universal Service Mechanism* (July 31, 2008), http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-08-

legacy alternatives, including both lower cost and the ability to obtain a broad range of speeds, from under 10 Mbps up to 100 Gbps.[87]

As the Commission has recognized, Verizon and AT&T are often each other's largest competitor for these types of larger enterprise services.[88] In addition, there are many other competitive carriers that provide these services either on a national scale (such as tw telecom,[89] Sprint,[90] Cogent,[91] Global Crossing,[92] Level 3,[93] PAETEC,[94] and XO[95]), or on a regional scale

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180A1.pdf; FCC Public Notice, *Wireline Competition Bureau Announces Comment Deadlines on E-Rate Broadband Notice of Proposed Rulemaking, Eligible Services List Further Notice of Proposed Rulemaking, and on E-Rate Draft Eligible Services List for Funding Year 2011* (June 9, 2010), http://www.fcc.gov/Daily_Releases/Daily_Business/2010/db0609/DOC-298725A1.txt.

[87] *See, e.g.*, IDC, U.S. Carrier Ethernet Services 2009-2013 Forecast, Doc #219177, July 2009, at 4 ("Numerous drivers are propelling the adoption and use of Ethernet services beyond the LAN and into the metro and wide area network. First and foremost is Ethernet's scalability and flexibility.").

[88] *See, e.g., Petition for Waiver of Pricing Flexibility Rules for Fast Packet Services*, Memorandum Opinion and Order, 20 FCC Rcd 16840, ¶ 11 (2005) ("Packet switching providers such as AT&T purchase Verizon's special access facilities as inputs to their own retail advanced services."); *Verizon Communications Inc. and MCI, Inc., Applications for Approval of Transfer of Control*, Memorandum Opinion and Order, 20 FCC Rcd 18433, ¶ 54 (2005) (rejecting allegations that the Verizon/MCI merger will likely result in anticompetitive effects in SBC's region, because "Verizon is spending billions of dollars to buy MCI's nationwide network and global enterprise and business reach, including facilities in SBC's region. In light of this investment, it is reasonable to expect Verizon to have strong incentives to utilize fully its assets in SBC's territory.").

[89] *See* tw telecom inc., Form 10-K, at 6 (SEC filed Feb. 12, 2010), http://www.sec.gov/Archives/edgar/data/1057758/000119312510030453/d10k.htm ("Our Ethernet Internet services are delivered using Ethernet connections with offerings of Ethernet (10 Mbps), Fast Ethernet (100 Mbps), Gigabit Ethernet (1 Gbps), and 10 Gigabit Ethernet (10 Gbps).").

[90] *See* Sprint, *Internet Access*, http://shop.sprint.com/en/solutions/ip_data_networking/internetaccess.shtml (Sprint's Dedicated Internet Access service offers "[h]igh-speed connections up to 2.5 Gbps / 10 Gbps").

[91] *See* Cogent, *Ethernet Point-to-Point*, http://www.cogentco.com/us/ (Cogent's Ethernet point-to-point services are "[a]vailable in speeds of 100 Mbps to full GigE").

[92] *See* Global Crossing, *Global Crossing Private Line Service*, http://www.globalcrossing.com/docs/enterprise_private_line/private_line_over.pdf ("Secure, dedicated, data transmission service offering circuit speeds from T-1 . . . to STM-16/OC-48, including Ethernet connection options.").

(such as Integra Telecom,[96] Deltacom,[97] and One Communications[98]). To cite a few specific examples, tw telecom claims to have "[e]thernet [p]roduct [l]eadership" with "unique & growing operational capabilities," and its "[f]ractional 10 Gig E service offers unprecedented scale," including "more cost effective capacity, scalability, & [c]lass of [s]ervice to support growing Enterprise bandwidth demands for multiple, differing applications."[99] It further notes that its service area covers "75 U.S. metropolitan markets"[100] and within that territory it "provides communications services in tens of thousands of commercial buildings to reach over 60 percent

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[93] *See* Level 3, *Dedicated Internet Access*, http://www.level3.com/index.cfm?pageID=44 (Level 3's Dedicated Internet Access service offers "[u]ltimate flexibility to choose the bandwidth that fits your needs, from 1.5 Mbps to OC-48, as well as Fast Ethernet and Gigabit Ethernet with both full-port and fractional throughputs").

[94] *See* PAETEC, *Ethernet Local Loop*, http://www.paetec.com/products-services/data/ethernet-local-loop/overview.html ("PAETEC's Ethernet Local Loop is a flexible, high-bandwidth solution . . . . Purchase bandwidth in increments ranging from 10 Mbps to 1 Gbps").

[95] *See* XO, *Ethernet Private Line*, http://www.xo.com/services/network/ethernet/Pages/EthernetPrivateLine.aspx ("XO Ethernet Private Line allows businesses to instantly and privately transmit sensitive, mission-critical data between locations at speeds up to 10 Gbps").

[96] *See* Integra Telecom, *High Bandwidth Data Products*, http://integratelecom.com/services/High_Bandwidth_Data_Products.php ("Integra's High Bandwidth services were designed to support the growing need for Internet access by businesses of all sizes," including "DS3 and OC-n – A wide range of speeds available – from 45Mb to 1Gb" and "Ethernet – Whether you're looking for traditional Ethernet, Fast Ethernet, Gigabit Ethernet or 10 Gigabit Ethernet, we've got you covered.").

[97] *See* Deltacom, *Enterprise Solutions: Data Networking & Internet Service*, http://www.deltacom.com/enterprise_data.html ("Deltacom's Private Line service provides end-to-end digital transmission" at "[s]peeds from DS-1 to OC-48 and 2.5Gbps and 10Gbps").

[98] *See* One Communications, *Private Line*, http://www.onecommunications.com/epl.aspx ("high-speed connections including DS1, DS3 and OCn").

[99] tw telecom, *Changing the Way Businesses Connect & Communicate*, Investor Presentation, at 8, 14, 16 (Sept. 2010), http://www.twtelecom.com/Documents/Investors/Presentations/2010/TWTCInvestorPresentation_Sept2010.pdf.

[100] tw telecom, *Changing the Way Businesses Connect & Communicate*, Investor Presentation, at 5 (Sept. 2010), http://www.twtelecom.com/Documents/Investors/Presentations/2010/TWTCInvestorPresentation_Sept2010.pdf.

of U.S. businesses."[101] Cogent "provide[s] service to over 145 major markets."[102] Cogent serves "'Corporate' (small businesses to Fortune 100 companies)."[103] Cogent's "primary service offering consists of Internet access and data transport" provided to "'Corporate' (small businesses to Fortune 100 companies)" customers over its "fiber optic, IP data-only network," which is available "to over 145 major markets."[104] Cbeyond states that it is offering business customers "higher band width, Ethernet based services, in place of the T1s we have deployed in our network today," and that "a significant percentage of our customers are in locations that could be served by Ethernet circuits."[105] PAETEC offers dedicated Internet access service in "84 of the nation's top 100 metropolitan areas," ranging from "[e]conomical sub-T-1 speeds for small businesses, and speeds from 1.5 Mbps to OC-n or GigE for those with higher bandwidth demands."[106]

### D. Wireless Business Broadband

Wireless networks – both fixed and mobile – may be used to provide various broadband services to a variety of business customers, from small businesses, to enterprises and carriers, to public safety organizations. Going forward, the same network may in fact be used to offer services that are mobile, fixed, or some combination of both, and fixed and mobile wireless

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[101] Time Warner Telecom Press Release, *Frost & Sullivan Names Time Warner Telecom's Larissa Herda CEO of the Year* (Jan. 18, 2007), http://www.twtelecom.com/Documents/Announcements/News/2007/frost_ceo.pdf.

[102] Cogent Communications, *About Cogent Communications*, http://www.cogentco.com/us/about_about.php.

[103] *Id.*

[104] *Id.*

[105] *Q2 2010 Cbeyond Inc. Earnings Conference Call – Final*, FD (Fair Disclosure) Wire, Transcript 080510a3261722.722 (Aug. 5, 2010) (statement by Cbeyond Inc. EVP & CFO Bob Fugate).

[106] PAETEC, *About Us*, http://www.paetec.com/about-us; PAETEC, *Dedicated Internet Access*, http://www.paetec.com/products-services/data/dedicated-internet-access/overview.html.

broadband services are therefore converging both with each other and other wireline broadband services, as has been the case with many other communications services. For example, providers may offer devices that can be plugged into a base station at home to provide "fixed" broadband services over a 4G network, but that the customer can also pick up and carry along for mobile broadband access outside of the home.

Today, numerous fixed wireless providers – including PAETEC, Airband, Towerstream, Nextlink (XO), Clearwire/Sprint, Covad Wireless, Business Only Broadband, and Tower Cloud – now offer fixed wireless service in areas throughout the country using spectrum in the 2 GHz, 3.6 GHz, 5.8 GHz, 11 GHz, 18 GHz, 23-24 GHz, 28-31 GHz, and 80 GHz bands.[107] These providers offer high-speed connections ranging from DS-1 to Gigabit Ethernet to OCn, both to business customers and in some cases wholesale customers.[108] These services are available with

[107] *See* PAETEC, *Fixed Wireless: In Brief*, http://www.paetec.com/downloads/app_brief/Fixed_Wireless_AppBrief.pdf; Airband, *Fixed-Wireless Network and Technology*, http://www.airband.com/network/airband-network/; Towerstream, *What We Do*, http://www.towerstream.com/index.asp?ref=products; XO Communications, *Broadband Wireless Access*, http://www.xo.com/services/network/Pages/broadband-wireless.aspx; Clearwire, *High Speed Internet*, http://www.clearwire.com/wireless-broadband/overview.php#; Covad, *Covad Wireless Services*, http://covad.com/web/services/wireless/index.html; Business Only Broadband, *Frequently Asked Questions*, http://www.bobbroadband.com/faq.php; Tower Cloud, *About Tower Cloud*, http://www.towercloud.com/company.shtml.

[108] *See, e.g.*, PAETEC, *Fixed Wireless: In Brief*, http://www.paetec.com/downloads/app_brief/Fixed_Wireless_AppBrief.pdf; FiberTower, *Primary & Redundancy Access for Government*, http://www.fibertower.com/corp/solutions-government.shtml; Airband, *Fixed-Wireless Network and Technology*, http://www.airband.com/network/airband-network/; Towerstream, *Reliable Internet Service*, http://www.towerstream.com/index.asp?ref=reliability; XO Communications, *Ethernet Services Overview*, http://www.xo.com/services/network/ethernet/Pages/overview.aspx; Clearwire Press Release, *Clearwire Extends 4G Leadership in the United States* (Mar. 23, 2010), http://investors.clearwire.com/phoenix.zhtml?c=198722&p=RssLanding&cat=news&id=1404905; Covad, *Covad Business DS3 Service*, http://www.covad.com/web/services/internet/business_ds3.html; Business Only Broadband, *Frequently Asked Questions*, http://www.bobbroadband.com/faq.php; Tower Cloud, *Key Products*, http://www.towercloud.com/services_products.shtml.

the features that business customers demand, such as "government-grade access,"[109] "99.99% uptime,"[110] and "carrier-class Service Level Agreements."[111]

PAETEC's fixed wireless offering, for example, "[t]ransports data at bandwidths from 20Mbps to 1Gbps"[112] and is "available to customers in all PAETEC markets."[113] Covad Wireless utilizes a combination of "license-exempt (5.8 GHz) and licensed band" wireless infrastructure to provide its customers with speeds averaging 768 Kbps to 45 Mbps or more.[114] Covad markets its fixed-wireless services as "ideally suited for small and medium sized businesses."[115] The company "offers service in over 220 cities in the largest metropolitan markets of California, as well as Las Vegas and North Las Vegas and suburban Chicago."[116] Towerstream provides fixed wireless with "bandwidth options ranging anywhere between 0.512Mbps and 1.5Gbps."[117] Towerstream's service is available "to businesses in 11 markets including New York City, Boston, Los Angeles, Chicago, the San Francisco Bay Area, Miami,

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[109] FiberTower, *Primary & Redundancy Access for Government*, http://www.fibertower.com/corp/solutions-government.shtml.

[110] Towerstream, *Overview*, http://www.towerstream.com/index.asp?ref=company.

[111] Conterra Telecom Services, *Company*, http://www.conterra.com/corporate/index.php.

[112] PAETEC, *Data – Fixed Wireless*, http://www.paetec.com/products-services/data/fixed-wireless/features.html.

[113] PAETEC, *Fixed Wireless: In Brief*, http://www.paetec.com/static-assets/downloads/app_brief/Fixed_Wireless_AppBrief.pdf.

[114] Covad Wireless, *T1-Class Business Internet Provider - WiMAX-featured Technology*, http://www.covadwireless.com/network-technology.html; Covad Wireless, *Covad Wireless T1-class Business Internet: Products & Services Overview*, http://www.covadwireless.com/services.html.

[115] Covad Wireless, *T1-Class Business Internet Provider - WiMAX-featured Technology*, http://www.covadwireless.com/network-technology.html.

[116] Covad Wireless, *T1-Class Business Internet Service Throughout California, in Las Vegas and the Chicago Area*, http://www.covadwireless.com/network-coverage.html.

[117] Towerstream, *What We Do*, http://www.towerstream.com/index.asp?ref=products.

Seattle, Dallas/Fort Worth, Philadelphia, Nashville, and the greater Providence area."[118] Airband recently merged with Sparkplug, "creating the largest fixed-wireless provider for businesses in the U.S."[119] As a result, the combined company "provides a full suite of . . . data services in 17 markets."[120]

Mobile wireless broadband services also are the subject of intense competition that has led to heavy investment by multiple competitors and speedy deployment of competing broadband networks and technologies. As described above, Verizon Wireless is now offering business customers a wide range of mobile wireless broadband services. Multiple other mobile wireless providers likewise offer a broad range of services to business customers, including a number that are deploying next-generation 4G wireless networks.

Competition for mobile wireless broadband is evident even from just the number of competitors. The marketplace for mobile wireless broadband service includes a wide range of providers, including the four national carriers, other facilities-based providers such as Clearwire, and regional carriers, as well as non-traditional wireless providers such as cable and satellite companies. As Verizon recently explained in great detail,[121] just the past year has seen the emergence of significant new competition from a variety of wireless providers that previously did not exist or were at best minor players. For example, Clearwire has aggressively deployed 4G wireless broadband service, while other providers such as Leap and Atlantic Tele-Network

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[118] Towerstream, *About Towerstream*, http://www.towerstream.com/index.asp?ref=company.

[119] Airband Communications Press Release, *Airband's Agent Channel Sales Double, Fueling Company Growth* (Sept. 20, 2010), http://www.airband.com/press-releases/airband%E2%80%99s-agent-channel-sales-double-fueling-company-growth/.

[120] *Id*.

[121] *See* Comments of Verizon Wireless, *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services*, WT Docket No. 10-133 (July 30, 2010).

have dramatically expanded the scope of their offerings. Similarly, a new business venture called LightSquared has emerged as the "[f]irst-ever wholesale nationwide 4G-LTE wireless broadband network integrated with satellite coverage," which plans to invest $7 billion in a network that will "allow[] partners to offer terrestrial-only, satellite-only, or integrated satellite-terrestrial services to their end users."[122]

Mobile wireless providers also are now in the midst of investing billions of dollars to deploy fourth generation wireless technologies such as LTE and WiMAX.[123] At anticipated typical speeds of 5-12 Mbps and peak download speeds as high as 50-60 Mbps for at least some networks, these new networks are comparable to many of the fixed broadband options that many businesses use today.[124] In 2008, Verizon Wireless invested over $9 billion for spectrum in the 700 MHz auction, and it will initiate commercial LTE service with coverage to approximately 110 million people in 38 markets this year, and expects to provide coverage to its entire 3G footprint by the end of 2013.[125] AT&T has begun LTE trials in Baltimore and Dallas, and plans

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[122] LightSquared Press Release, *Introducing LightSquared: Revolutionizing the U.S. Wireless Industry*, http://www.lightsquared.com/press-room/press-releases/introducing-lightsquared-revolutionizing-the-u-s-wireless-industry-2/ (July 20, 2010).

[123] *See* Comments of Verizon and Verizon Wireless at 69-72, *Framework for Broadband Internet Service*, GN Docket No. 10-127 (July 15, 2010).

[124] *See, e.g.*, Verizon Wireless News Release, *Verizon Launches 4G LTE in 38 Major Metropolitan Areas by the End of the Year* (Oct. 6, 2010), http://news.vzw.com/news/2010/10/pr2010-10-01c.html ("Verizon Wireless expects 4G LTE average data rates to be 5 to 12 megabits per second (Mbps) on the downlink and 2 to 5 Mbps on the uplink in real-world, loaded network environments."); Marguerite Reardon, *Verizon Expects 4G Launch Next Year*, cnet reviews, http://reviews.cnet.com/8301-13970_7-10166622-78.html (Feb. 18, 2009) ("In its initial trials, Verizon says that it has demonstrated peak download speeds of around 50Mbps to 60Mbps.").

[125] Mike Dano, *Verizon To Launch LTE in 38 Markets This Year*, FierceWireless (Oct. 6, 2010), http://www.fiercewireless.com/ctialive/story/verizon-launch-lte-38-markets-year/2010-10-06; Verizon Wireless News Release, *Verizon Launches 4G LTE in 38 Major Metropolitan Areas by the End of the Year* (Oct. 6, 2010), http://news.vzw.com/news/2010/10/pr2010-10-01c.html;

to begin commercial deployment in 2011.[126] Sprint now offers 4G to 55 markets and plans to bring service to multiple additional markets including Los Angeles, New York, and Miami during this year.[127] Clearwire has launched 4G service in at least 56 markets covering 66 million people, and plans to cover 120 million people by the end of this year.[128] Cable companies such as Comcast and Time Warner have already begun to resell Clearwire's 4G service in more than 35 markets.[129] Regional wireless providers are also upgrading. MetroPCS, for example, recently became the first wireless provider to commercially deploy LTE in the U.S.[130]

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Verizon Wireless, *News Center: LTE Information Center*, http://news.vzw.com/LTE/Overview.html.

[126] Phil Goldstein, *AT&T To Launch LTE by Mid-2011*, FierceWireless (Sept. 16, 2010), http://www.fiercewireless.com/story/t-launching-lte-mid-2011/2010-09-16.

[127] Sprint News Release, *Sprint Turns on 4G Service in Minneapolis-St. Paul and Pittsburgh* (Sept. 30, 2010), http://newsroom.sprint.com/article_display.cfm?article_id=1650; Sprint News Release, *Sprint Launches 4G Coverage in Delaware, Florida and Michigan and Extends 4G Coverage in California* (Aug. 2, 2010), http://newsroom.sprint.com/article_display.cfm?article_id=1587.

[128] Clearwire News Release, *Clearwire Brings the Strength of CLEAR4G to Pittsburgh* (Sept. 30, 2010), http://newsroom.clearwire.com/phoenix.zhtml?c=214419&p=irol-newsArticle&ID=1477463&highlight=; Clearwire News Release, *Clearwire Reports Strong Second Quarter 2010 Results* (Aug. 4, 2010), http://newsroom.clearwire.com/phoenix.zhtml?c=214419&p=irol-newsArticle&ID=1456460&highlight=.

[129] *See* Comcast, *Where Does Comcast Offer XFINITY Internet 2go Service?*, http://customer.comcast.com/Pages/FAQViewer.aspx?seoid=available-areas-hs2go-3g; Comcast Press Release, *Comcast Launches High-Speed Wireless Data Service in Philadelphia*, http://www.comcast.com/About/PressRelease/PressReleaseDetail.ashx?PRID=935 (Nov. 4, 2009); Time Warner Cable, *4G Benefits*, http://4gactivation.timewarnercable.com/benefits.html. Time Warner Cable "continue[s] to invest in commercial products," for example, "business class mobile, our wireless data product, is now available in combination with our core data products in Texas and the Carolinas, with other areas planned to launch at the end of 2010." *Q2 2010 Time Warner Cable Inc. Earnings Conference Call – Final*, FD (Fair Disclosure) Wire, Transcript 080510a3164942.742 (Aug. 5, 2010) (statement by Time Warner Cable, Inc. COO Landel Hobbs).

[130] *See* MetroPCS News Release, *MetroPCS Launches First 4G LTE Services in the United States and Unveils World's First Commercially Available 4G LTE Phone* (Sept. 21, 2010), http://www.metropcs.com/presscenter/assets/pdf/mpcs-news-20100921.pdf. MetroPCS currently

All of the national mobile wireless carriers are offering broadband services designed for business customers. For example, AT&T's data plans for enterprise customers include a "number of options for extending host connectivity to mobile users or devices via Frame Relay or Network Initiated VPN."[131] AT&T's Enterprise Mobility service offers businesses a number of mobile applications such as Location-based Services, Field Service Automation, Fleet Management, and Sales Force Automation,[132] as well as industry-specific solutions for consulting, retail, financial services, and healthcare, among others.[133] Sprint offers "tailored solutions for streamlined communications, data access, [and] mobile productivity" for businesses in the finance, retail, and healthcare industries, among others.[134] T-Mobile states that it is

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offers 4G LTE service in Las Vegas and Dallas-Fort Worth. *See* MetroPCS News Release, *MetroPCS Launches Commercial 4G LTE Services in the Dallas/Fort Worth Metroplex* (Sept. 29, 2010), http://www.metropcs.com/presscenter/assets/pdf/mpcs-news-20100929.pdf.

[131] AT&T, *DataConnect*, http://www.wireless.att.com/businesscenter/plans/dataconnect.jsp?wtLinkName=DataConnectPlans&wtLinkLoc=S1&WT.svl=2; *see also* AT&T, *Wireless WAN: Related Services*, http://www.business.att.com/enterprise/Service/enterprise-mobility-enterprise/mobile-remote-access-enterprise/wireless-wan-enterprise/ (AT&T's Commercial Connectivity Service "[e]xtend[s] the reach of your corporate network to your mobile workforce with security-enhanced, back-end connectivity between your WAN and the AT&T cellular network."); AT&T, *Mobile Remote Access: Services*, http://www.business.att.com/enterprise/Family/enterprise-mobility-enterprise/mobile-remote-access-enterprise/ (AT&T's LaptopConnect data service enables businesses to "[m]aximize corporate assets" and "[e]nable and empower remote workers.").

[132] AT&T, *Mobile Applications*, http://www.business.att.com/enterprise/Family/enterprise-mobility-enterprise/mobile-applications-enterprise/.

[133] *See* AT&T, *Mobile Applications*, http://www.business.att.com/enterprise/Family/enterprise-mobility-enterprise/mobile-applications-enterprise/; AT&T, *Vertical Industry Solutions*, http://www.wireless.att.com/businesscenter/solutions/industry-solutions/vertical-industry/index.jsp?wtLinkName=VerticalIndustrySolutions&wtLinkLoc=LN.

[134] Sprint, *Solutions by Industry*, http://shop.sprint.com/en/solutions/solutions_by_industry.shtml; *see also* Sprint, *Sprint Data Link*, http://shop.sprint.com/en/solutions/ip_convergence/datalink.shtml (Sprint Data Link enables a business to "maintain a secure, seamless VPN connection between your enterprise network and the advanced Sprint 4G and 3G networks," through the use of mobile broadband cards, wireless WANs, and telemetry); Sprint, *Mobile Broadband/4G*, http://shop.sprint.com/en/solutions/

"investing in the future of [its] network is key to delivering innovative business solutions."[135] T-Mobile also offers machine-to-machine ("M2M") services and claims to be "a recognized leader in M2M connections," "supporting customers with innovative solutions that connect to and monitor business and personal assets."[136]

In addition to these mobile broadband business offerings, multiple satellite broadband alternatives also are available, and are particularly useful for business customers in remote locations. Verizon, for example, has partnered with Tachyon.Net to provide Internet satellite services to small, remote offices with fewer than 10 users, where broadband access is not otherwise available or too costly.[137] HughesNet "deliver[s] business-grade satellite Internet access at speeds comparable to DSL and cable," and "[i]n addition to primary broadband Internet access, Hughes offers broadband backup access . . . and a virtual private network."[138] ViaSat's WildBlue service currently provides service up to 1.5 Mbps downstream/256 kbps upstream, but the ViaSat-1 satellite which is scheduled to launch in the first half of 2011 will enable an entry-level upload speed of 2 Mbps Satellite broadband. WildBlue is currently marketed as a service for businesses and government, and ViaSat also promotes the sale of its SurfBeam broadband

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mobile_broadband/index.shtml (Sprint has established a "Business Private Store" to purchase and access solutions such as 4G mobile broadband, 3G and 4G routers, and wireless WAN).

[135] T-Mobile, *Business Solutions: Innovation*, http://www.t-mobile.com/Business/Information.aspx?tp=innovation_network&WT.z_unav=mst_shop_business_global.

[136] T-Mobile, *Business Solutions: Machine-to-Machine*, http://www.t-mobile.com/Business/Information.aspx?tp=machine_to_machine&WT.z_unav=mst_shop_business_global.

[137] *See* Verizon Business, *Broadband*, http://www.verizonbusiness.com/us/Products/networking/internet/broadband/internetsat.xml.

[138] Hughes, *For Business*, http://www.hughes.com/Pages/ForSmallBusiness.aspx. HughesNet's enterprise customers can also access "High-Availability VPN, Optimized VPN, and Access Continuity." Hughes, *Managed Network Services That Fuel Global Enterprise*, http://www.hughes.com/Pages/ForEnterprise.aspx.

product, the "technology behind WildBlue," to business customers.[139] IP Access International delivers "high speed satellite Internet service for fixed as well as mobile satellite communications to businesses worldwide,"[140] including solutions for the mining, construction, and forestry industries, and other businesses that "operate in remote locations, where severe weather and terrestrial facilities are a challenge."[141] Spacenet promotes its commercial grade satellite product, Connexstar Performance, as having speeds up to 5 Mbps and "suitable for emergency response vehicles, oilfield exploration, mining facilities, corporate offices . . . retail stores, restaurants, financial institutions, healthcare organizations, and other fixed or transportable locations."[142] Spacenet also offers StarBand, "[a] value oriented two-way high-speed satellite Internet access service available for small office/home office (SOHO) and small business customers throughout the United States."[143] Skycasters, another satellite broadband services company, focuses on remote businesses such as oil, gas, and mining.[144] "Unlike other satellite communications providers, everything in [Skycaster's] infrastructure – from [ ] teleports and hubs to the network operating center – is business-grade and company-owned." [145]

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[139] *See* WildBlue, *Enterprise Solutions for Business & Government*, http://www.wildblue.com/forYourEnterprise/index.jsp; ViaSat, *Satellite Networking Products Overview*, http://www.viasat.com/enterprise-satellite-networks/vsat-networks.

[140] IP Access International, *Company*, http://www.ipinternational.net/company.php.

[141] IP Access International, *Mining*, http://www.ipinternational.net/mining.php; IP Access International, *Construction*, http://www.ipinternational.net/construction.php; IP Access International, *Energy*, http://www.ipinternational.net/energy.php; IP Access International, *Forestry*, http://www.ipinternational.net/forestry.php.

[142] Spacenet, *Satellite Connectivity*, http://www.spacenet.com/services/connexstar/.

[143] Spacenet, *StarBand Satellite Internet*, http://www.spacenet.com/customers/starband/.

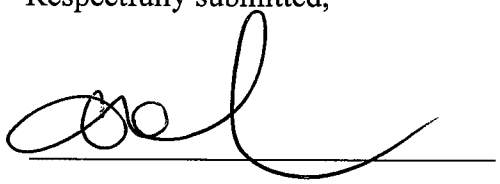
[144] Skycasters, *Skycasters Satellite Internet*, http://www.skycasters.com/.

[145] *Id.*

## IV. CONCLUSION

The Commission should find that the "business broadband marketplace" is highly dynamic with extensive competition and new choices emerging.

Respectfully submitted,

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